

**Translation**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>4465-X-22647</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/EP2004/003283</b>	International filing date (day/month/year) <b>27.03.2004</b>	Priority date (day/month/year) <b>01.04.2003</b>
International Patent Classification (IPC) or national classification and IPC		
Applicant <b>SÜD-CHEMIE AG</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising: <ul style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>7</u> sheets, as follows:             <ul style="list-style-type: none"> <li><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</li> <li><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</li> </ul> </li> <li>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</li> </ul>
4.	This report contains indications relating to the following items: <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input checked="" type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. I

Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-33 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1-34 \_\_\_\_\_ received by this Authority on 10.11.2004 with letter
- nos.\* \_\_\_\_\_ received by this Authority on of 09.11.2004
- ☐ the drawings:
- sheets \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-34	YES
	Claims		NO
Inventive step (IS)	Claims	1-34	YES
	Claims		NO
Industrial applicability (IA)	Claims	1-34	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
1. Reference is made to the following documents:			
D1: KATOVIC A. AND GIORDANO G.: "Preliminary Study of ZSM-12 Zeolite Synthesis" CHEMISTRY EXPRESS, Vol. 6, No. 12, 1991, pages 969-972, XP009033372			
D2: TOKTAREV A.V. AND IONE K.G.: "Studies on Crystallization of ZSM-12 Type Zeolite" STUDIES IN SURFACE SCIENCE AND CATALYSIS, Vol. 105, 1997, pages 333-339, XP002287564.			
2. The present application concerns a method for producing a ZSM-12 zeolite			
(a1) using precipitated silicic acid as the silica source,			
(a2) an H <sub>2</sub> O: SiO <sub>2</sub> ratio of 5 to 15,			
(a3) and stirring of the synthesis gel (claim 16),			
and a ZSM-12 zeolite prepared in this way (claim 1),			
a catalyst having a ZSM-12 zeolite of this kind (claim 8), and			
the use of a ZSM-12 zeolite of this kind for the transformation of organic compounds (claim 29).			

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
3.	Document D1 discloses the production of ZSM-12 using precipitated silicic acid as the silica source and a synthesis gel composition wherein the molar ratio of $H_2O : SiO_2$ is 20 under static conditions (document D1, sample 4 and page 969).
3.1	The present invention differs from document D1 in that the synthesis gel is stirred and the molar ratio of $H_2O : SiO_2$ is between 5 and 15.
4.	Document D2 discloses the production of ZSM-12 using "wide-pore silica gel" as the silica source and a synthesis gel composition having a molar ratio of $H_2O : SiO_2$ of 5, 10, 15 and 14 under static conditions (document D2, 2. Experimental, 3. Results, and table 1).
4.1	The present invention differs from document D2 in that the synthesis gel is stirred and document D2 does not unambiguously disclose precipitated silicic acid.
5.	It is clear from the present examples that the silica source, the molar $H_2O : SiO_2$ ratio and the stirring of the synthesis gel have a significant effect on the properties of the end product (examples 1-12 in the description; document D1, table 1; document D2, table 1).
5.1	Although there is no clear distinguishing feature, the examiner has no evidence for the fact that the methods of production of documents D1 and D2 lead

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to a ZSM-12 according to claim 1 of the present invention. Consequently, it would appear appropriate to recognize novelty. The subject matter of claims 1-34 is therefore novel (PCT Article 33(2)).

6. Documents D1 and D2 offer nothing to suggest that the combination of the method steps a1, a2 and a3 would result in a particular ZSM-12, which in addition would be suitable for the hydroisomerisation of higher paraffins (examples 1-12 in the description). The subject matter of claims 1-34 therefore involves an inventive step (PCT Article 33(3)).

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**Box No. VIII**      **Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1.      The applicant's attention is drawn to the use of the term "approximately" in the claims.